FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

All sections must be addressed, or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Flathead National Forest c/o Beth Gardner

Mailing Address: Swan Lake Ranger District, 200 Ranger Station Road

City: Bigfork State: MT Zip: 59911

Telephone: 406-837-7508 E-mail: beth.gardner@usda.gov

B. Contact Person (if different than applicant): (same)

Address:

City: State: Zip:

Telephone: E-mail:

C. Landowner and/or Lessee Name (if different than applicant): Sylvia Stohr, Co-trustee for Yoder Swan Lake Trust

Mailing Address: 615 SE Linn St Apt A

City: Portland State: OR Zip: 97202-7062

Telephone: E-mail: stohr@comcast.net

II. PROJECT INFORMATION

A. Project Name: Hall Creek Fish Barrier Removal

River, stream, or lake: Hall Creek

Location: Township: 25N Range: 18W Section: 14

Latitude: 47.934 Longitude: -113.851 *within project (decimal degrees)*

County: Lake

B. Purpose of Project:

Remove an old, intentional fish barrier that no longer serves any value so to provide upstream/downstream passage to all aquatic species and restore natural channel.

C. Brief Project Description (attach additional information to end of application):

In 1989 a fish barrier was constructed in Hall Creek in order to conserve native Westslope Cutthroat Trout. An informal partnership between Montana Fish, Wildlife & Parks, Flathead National Forest, and a small private landowner sought to conserve Westslope Cutthroat Trout by isolated a large segment (about 2.3 miles) of Hall Creek from invasion by non-native Brook Trout and Rainbow Trout. The best location for the barrier was on private land near the confluence with Swan Lake. All work was done with a handshake and minimal paperwork. The landowner granted access. The Forest Service constructed the barrier. Then in 1990, Montana Fish, Wildlife & Parks applied rotenone to Hall Creek and subsequently restocked with Cutthroat Trout.

The project was not successful. From the beginning, it was uncertain if the piscicide completely removed all non-native fish. Furthermore the headwater lake (Hall Lake) was not treated and it also contained non-native alleles which drifted downstream. Over time the cutthroat trout in Hall Creek had increasing Rainbow Trout introgression. In addition to this, the barrier had a unique design which allowed fish passage when deemed desirable and for many years it was opened in spring during Cutthroat Trout spawning season. Unfortunately, this allowed Brook Trout to pass upstream as well. Once this was discovered, the barrier remained shut but Brook Trout continued to multiply upstream. As the years progressed, the fish in Hall Creek had less and less conservation value. The partners now agree it is best to remove the barrier since it has no purpose. The removal of the unneeded barrier will re-connect aquatic organism passage of quality fish habitat in Hall Creek with Swan Lake.

Although the project is on private lands, it is in the public's best interest to remove it. It is unfair to burden the landowner with this cost since they graciously allowed this work for the benefit of the public without any compensation or even requirement of a perpetual easement. It is also wise to remove an unneeded and forgotten barrier in a proper manner rather than allowing failure and subsequent erosion. To be good neighbors, I would like Montana Fish, Wildlife & Parks and the Forest Service work jointly to remove the barrier for public benefit. The Forest Service has already donated the value of planning, survey, NEPA analysis and will donate the value of permit acquisition. However, due to sharply declining agency budget, the Forest Service cannot fund the implementation within its appropriated budget. Instead I hope to assemble multiple funding, which includes Montana Fish, Wildlife & Parks "Future Fisheries Improvement Program".

The existing barrier is a cement wall approximately 5 feet high and 16 feet wide. Funding is needed for an excavator will break apart the barrier and a dump truck will haul it away. Stream banks will be reshaped to match natural conditions and a few rocks placed in the channel to stabilize stream gradient. Disturbed areas will be mulched with straw. Work would take place over 1 or 2 days during low flow period (July through November). The project would be accomplished by a public works contract that is open to competitive bidding and overseen by Forest Service engineers.

D. Length of stream or size of lake that will be treated (project extent): Approximately 80 feet
Length/size of impact, if larger than project extent (e.g. stream miles opened): 2.3 miles

E. Project Budget:

Grant Request (Dollars):	**$**	**9,000**
Matching Dollars:	**$**	**3,000 ($2,00 Pending and $1,000 Secured)**
Matching In-Kind Services:*	**$**	

**salaries of government employees are not considered matching contributions*

Total Project Cost: $ 12,000

F. **Attach** itemized (line item) budget – *see provided budget spreadsheet. Note the entire value of the project is approximately $14,500 but already completed in-kind government salary costs cannot be shown per this application guideline.*

G. **Attach** specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire* (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. **Attach** land management & maintenance plans that will ensure protection of the reclaimed area. *Note this project is on private lands and no land management plan is appropriate. There are no expected maintenance needs. The stream channel will return to historic function and pattern.*

III. PROJECT BENEFITS (attach additional information to end of application):

A. What species of fish will benefit from this project?

Brook Trout, Rainbow Trout, and Hybridized westslope cutthroat trout x rainbow trout will certainly benefit from improved upstream/downstream fish passage. It is possible that migratory Westslope Cutthroat Trout will also ascend into Hall Creek but it is unclear how many still persist in Swan Lake and whether they will return. Likewise, it is possible that Sculpins (undetermined *Cottus* species) may recolonize Hall Creek since it appears to have suitable habitat but historic records of their use are uncertain.

B. How will the project protect or enhance wild fish habitat?

Reconnecting upstream and downstream aquatic organism passage between Hall Creek and Swan Lake inherently help protect wild fish habitat. The restoration of an unimpeded stream channel should restore natural movements of macroinvertebrates, amphibians and fish.

C. Will the project improve fish populations and/or fishing? To what extent?

While there is no evidence that the fishery upstream of the barrier was adversely impacted by the barrier, removal of this unnecessary barrier should help conserve population viability and genetic exchange. The project is unlikely to have any impact on recreational fishing. Very little recreational fishing takes place in Hall Creek at this time (due to the small size and minimal road access) and restoration of fish passage would not help or hinder that.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?

No. The barrier site is on private land and will remain so. Approximately 70% of fish habitat in Hall Creek is already open to public fishing but probably receives very little use. The stream is small, heavily forested, and has minimal road access.

E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

No maintenance is needed for this type of work. This project will remove the structure and allow natural stream processes to resume unimpeded.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?

The barrier was a necessary aspect of a Westslope Cutthroat Trout restoration project jointly developed by Montana Fish, Willdife & Parks and the Forest Service. Fisheries biologists from both agencies in 1989 recognized that an upstream barrier is crucial to preserve the Westslope Cutthroat Trout from invasion of non-native species. Since the restoration project failed, the barrier serves no purpose and its removal will correct the habitat degradation.

G. What public benefits will be realized from this project?

It is in the public's best interest to provide natural stream conditions and fish passage whenever possible. It is also in the public's best interest to remove an unneeded barrier in a proper manner rather than waiting for failure and subsequent erosion as will inevitably happen to all anthropogenic structures that are not maintained. Furthermore, acting as a good neighbor to a small private landowner maintains good will for any future Westslope Cutthroat Trout restoration proposals.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No. This work does not affect any water rights. There are no downstream neighbors (stream discharges to Swan Lake, a public resource). Adjacent landowners were scoped during the Forest Service NEPA analysis and no concerns or comments were raised.

I. Will the project result in the development of commercial recreational use on the site? (explain):

No. The property is used by the family as a summer cabin and not open to the public.

J. Is this project associated with the reclamation of past mining activity?

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Elizabeth A Gardner Date: May 27, 2020

Sponsor (if applicable): _____

Submittal: **Applications must be *signed and received before* December 1 and June 1 of each year to be considered for the subsequent funding period**. Late or incomplete applications will be rejected.

Mail to:	Montana FWP Fish Management Bureau PO Box 200701 Helena, MT 59620-0701	Email:	Michelle McGree mmcgree@mt.gov (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES**	IN-KIND CASH	TOTAL
Personnel* **								
Survey	1	Engineering pers	Already donat	$ -				$ -
NEPA Review	3	Fisheries, Wildlif	Already donated					
Engineering Design/Contract prep	2	Engineering pers	$500.00	$ 1,000.00			1,000.00	$ 1,000.00
Permitting	1	Hydrologist pers	To be donate	$ -				$ -
Contract administration	2	Engineering pers	$500.00	$ 1,000.00			1,000.00	$ 1,000.00
				$ -				$ -
			Sub-Total	$ 2,000.00	$ -	$ -	$ 2,000.00	$ 2,000.00
Travel								
Mileage				$ -				$ -
Per diem				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Construction Materials** **								
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Equipment, Labor, and Mobilization								
Excavator, dump truck	1	small public works contract		$ 10,000.00	8,500.00		1,500.00	$ 10,000.00
				$ -				$ -
				$ -				$ -
				$ -				$ -
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				$ -				$ -
				$ -				$ -

(Revised 5/27/2020)

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

				$ -				$ -
			Sub-Total	$ 10,000.00	$ 8,500.00	$ -	$ 1,500.00	$ 10,000.00
			TOTALS	$ 12,000.00	$ 8,500.00	$ -	$ 3,500.00	$ 12,000.00

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). Describe here or in text. Daily rates are provided by USDA Forest Service budget. Rates shown are estimates for Fiscal Year 2021

Reminder: Government salaries cannot be used as in-kind match

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a minimum of two competitive bids for the cost of undertaking the project. At least 2 competitive bids are expected for this public works contract

****The Review Panel recommends a maximum fencing cost of $1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

MATCHING CONTRIBUTIONS (do not include requested funds)

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Secured? (Y/N)
Montana Trout Unlimited mini-grant	$ -	$ 1,500.00	$ 1,500.00	N
Montana AFS Resource Action Fund	$ -	$ 2,000.00	$ 2,000.00	N
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 3,500.00	$ 3,500.00	


Hall Creek Fish Barrier Removal Project
Swan Lake Ranger District
Flathead National Forest
LAKE
SWAN LAKE
Swan Lake Boat Launch
Project Location
FOREST SERVICE
0 0.25 0.5 1 Miles
USDA
United States Department of Agriculture
Forest Service
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Hall Creek Fish Barrier Removal

Historic and Existing Condition and Design Information

Historic Condition

The historic stream channel is assumed to be largely a Rosgen B4 system. The floodplain was very slightly confined and the stream had approximately 1.2 sinuosity. Waterslope gradient was approximately 1.8 percent. These assumptions are based on topography, longitudinal profile, substrate materials and riparian vegetation. There is no reference reach to confirm these approximation. The barrier appears to have built midway of a natural meander to take advantage of reduced floodplain width. The landowners also took advantage of this slightly reduced floodplain width to construct their driveway bridge.

Existing Condition

The 1989 barrier appears to have created an upstream aggraded (deposition) area that extends about 80 feet. This deposition area has less than 1% gradient and it dominated by gravels. Bank full width is 14 feet. Immediately downstream of the barrier, the channel degraded (scoured below historic profile) for approximately 80 feet. This area mimics a Rosgen A3/A4 in that it is more strongly confined, linear, coarser substrate, and approximately 3% gradient. Bank full width is 12 feet. Further downstream, the channel returns to historic condition and still Rosgen B4 system. The channel is largely riffle habitat all the way to Swan Lake and dominated by gravels. Large woody debris is sparse (possibly from land development) and pools are small.

Reconstruction Plan

The concrete structure, metal apron and associated hardware will be removed. Stream banks will be resloped to natural conditions, seeded and mulched. Three grade control weirs, using D_{100}+ cobbles, will be built in the upstream depositional area to prevent excessive headcutting. The approximate location of these weirs is shown on plan view map attachment. Typical weir design are also provided in attachment. No reconstruction will take downstream of the barrier. The degraded section will be allowed to naturally fill in with substrates. In recent months, the landowner has begun construction on a gazebo a short distance upstream of the barrier. No stream bank protection is included with this plan.

The following photo shows the existing barrier. This was taken a few years ago from the private bridge about 10 feet downstream of the barrier (the bridge railing is just visible in lower right corner). The barrier consists of a concrete structure with a removal metal apron downstream to prevent a jumping pool. The riprap beside the barrier were imported and will be recycled into grade control weirs (they exceed D_{100} substrate size).

The following photograph is from slightly different vantage point and shows the structure during high flows.

The following photo is taken in the degraded channel area and faces upstream to the barrier. The bridge is visible and the white-water area just above that is the terminus of the barrier.

The following photo shows the aggraded section above the barrier. The landowner's gazebo is in the photograph on left.

The following photograph shows the typical gravels found upstream of the barrier. Taken May 13, 2020

The following photograph shows typical gravel/cobble substrate below the barrier. Taken May 13, 2020

015-2020

Hall Creek fish barrier removal

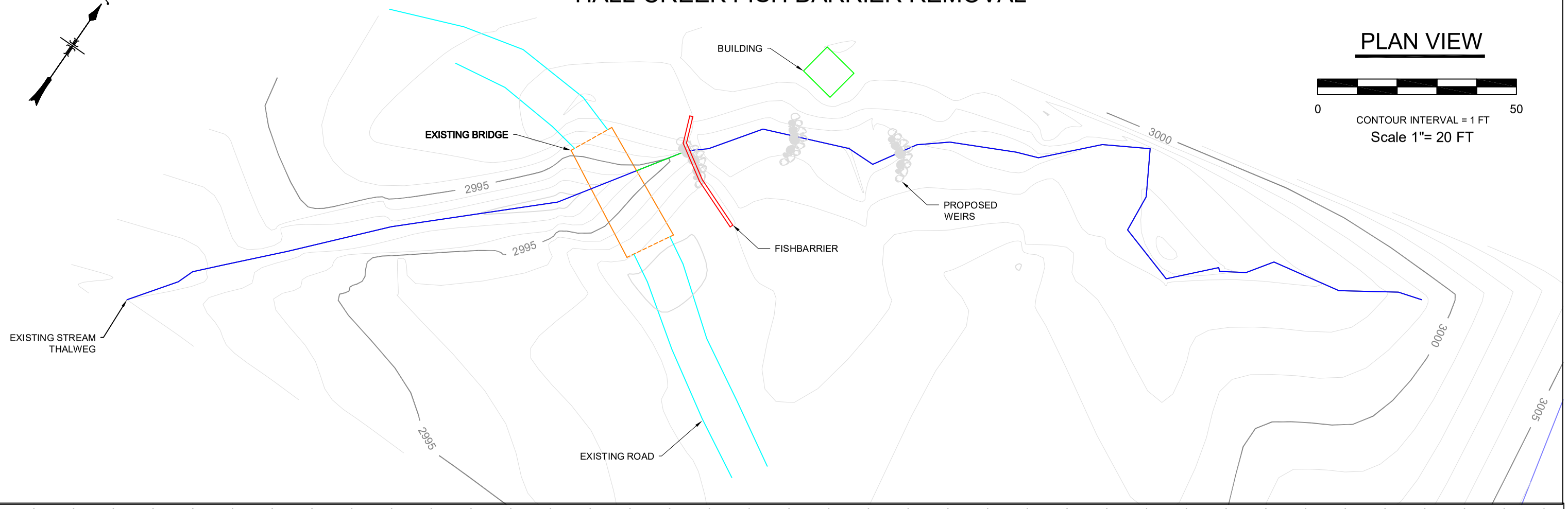
HALL CREEK FISH BARRIER REMOVAL

PLAN VIEW

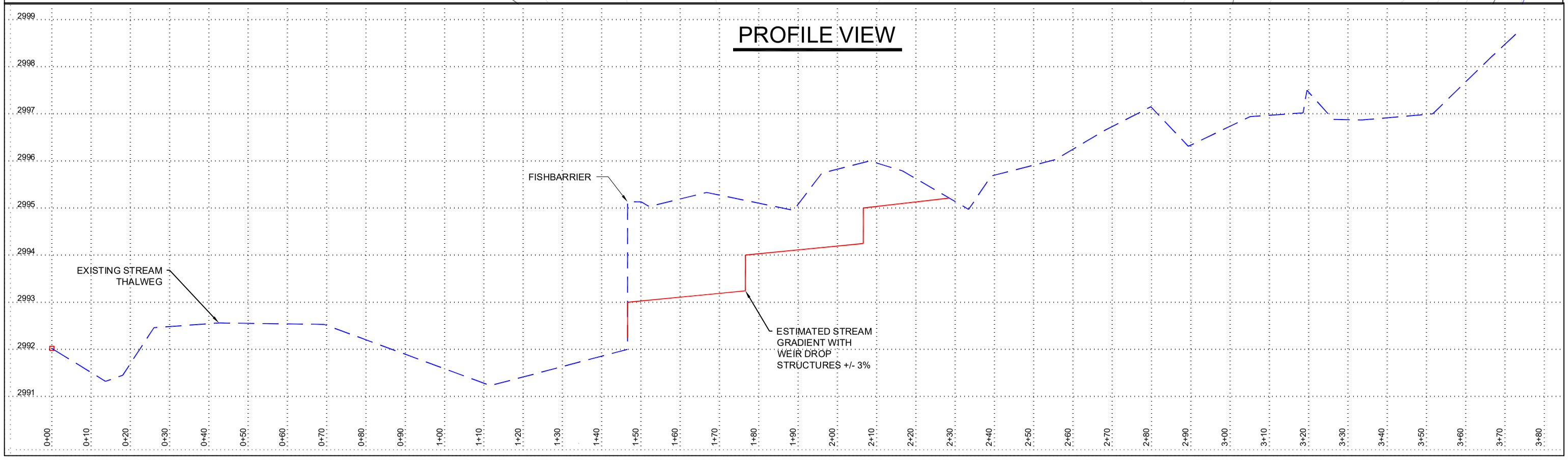
0 50

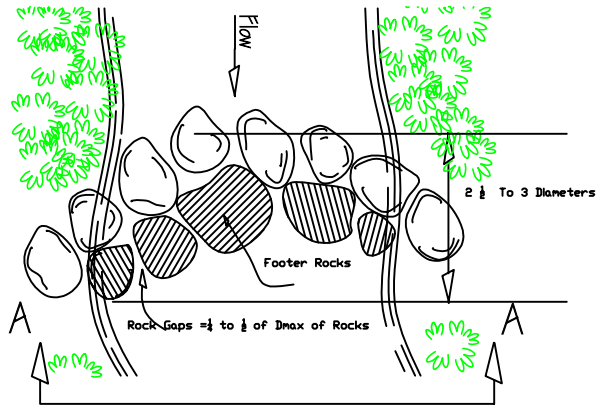
CONTOUR INTERVAL = 1 FT

Scale 1"= 20 FT

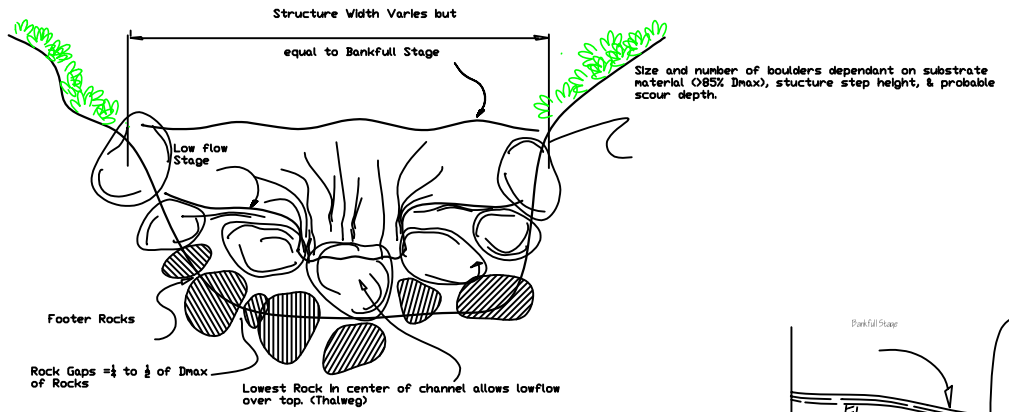


PROFILE VIEW

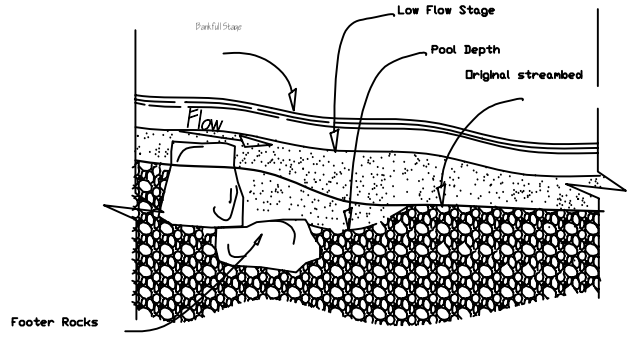




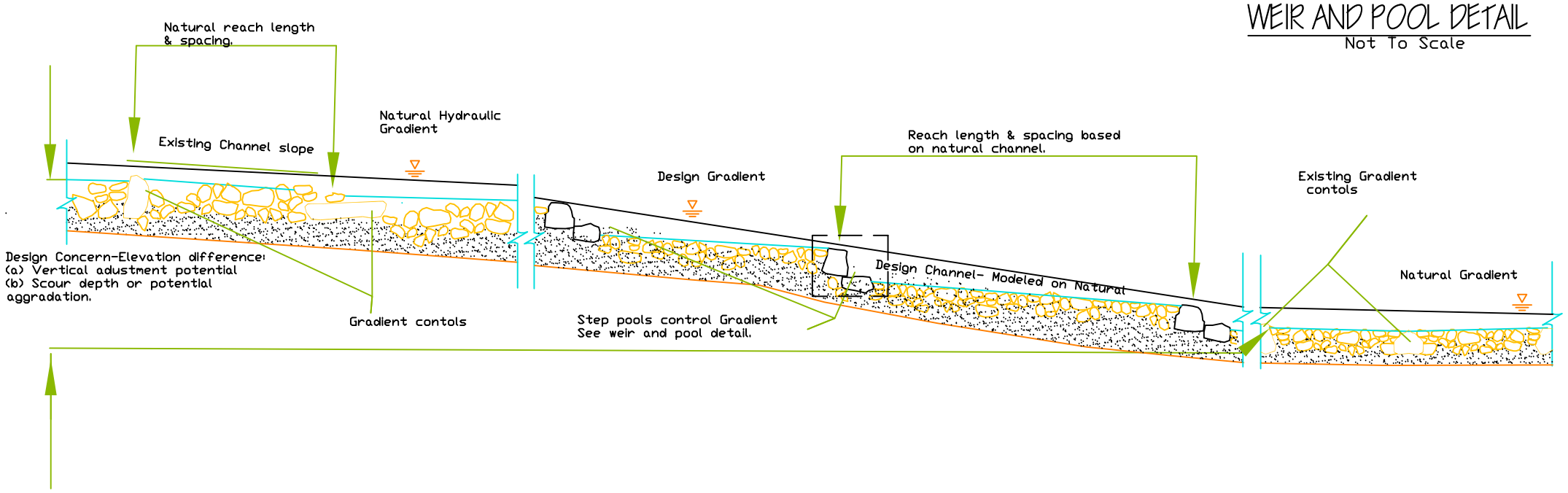
TYPICAL PLAN VIEW - WEIR AND POOL
Not To Scale



SECTION A-A
Not To Scale



WEIR AND POOL DETAIL
Not To Scale



U.S DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-1
NORTHERN REGION

Drawn M. Guenthner
Design M. Guenthner
Checked
Reviewed

Forest: FLATHEAD NATIONAL FOREST
Project Name: HALL CREEK FISH BARRIER REMOVAL

Sheet Title: ROCK WEIR TYPICALS
Scale: AS SHOWN
Sheet Number: 1 OF 2

November 21, 2019

Chris Dowling
Swan Lake District Ranger
200 Ranger Station Road
Bigfork, MT 59911

Dear Mr. Dowling;

By this letter we wish to convey our approval of the removal of the 1989 fish barrier on Hall Creek located on our property. While we were happy to be part of that cutthroat trout restoration project, we understand that the barrier no longer serves a meaningful purpose. Therefore, it is time to remove it. We understand that removal of the barrier involves using an excavator to break down the cement walls, reshape the channel and then a dump truck to haul away the waste materials. Work would be done over one day (2 at most) during low flows, preferably in autumn.

We authorize the use of this heavy equipment on our property as long as all work complies with all necessary permits. We understand this work will temporarily increase turbidity in Hall Creek and create noise. We would appreciate being kept informed on construction start dates. Thank you for being a good neighbor and helping to restore the stream.

Sincerely,

Sylvia Stohr, Co-Trustee
Yoder Swan Lake Trust

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PORTLAND OR 972
25 NOV 2019 PM 4 L

BETH GARDNER
FISHERIES BIOLOGIST
FOREST SERVICE
FLATHEAD NATIONAL FOREST
200 RANGER STATION Rd
BIG FORK MT
59911

59911-355500

Hall Creek fish barrier removal 015-2020

Montana Fish, Wildlife & Parks

Region One
490 N. Meridian Road
Kalispell, MT 59901-3854
Leo: (406) 751-4548
Fax: (406) 257-0349
April 22, 2020

To whom it may concern:

I am writing this letter in support of a project being submitted to Future Fisheries by Beth Gardner and the Flathead National Forest. The purpose of the project is to replace a man-made barrier structure on Hall Creek, a tributary of Swan Lake in northwest Montana. The barrier was installed in the early 1990's as a conservation effort for native westslope cutthroat trout. Unfortunately, the project was not successful and non-native fish species now inhabit much of the stream habitat. In its current state, the barrier structure is still secure, but several cubic yards of fill material are poised to be released into the creek if should ever fail. Additionally, the barrier exists on private land and the current landowner likely does not want the liability of having it, if it is no longer meeting conservation goals. Beth and the Flathead National Forest are therefore seeking to clean up a previous project. Funding projects like these is difficult and I commend Beth for seeking creative ways to accomplish the task. This project would mitigate actions taken many years ago and would ensure the persistence of quality habitat in a perennial stream. Please accept this letter as my formal support for this project. If you have any questions regarding this project or need any additional information, please feel free to contact me at the numbers listed above. Thanks.

Sincerely,

Leo Rosenthal
Fisheries Biologist